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ABSTRACT

This guide for using the Comprehensive Career Education Model (CCEM), which consists of 131 units developed under the rubric of the "school-based" model at the Ohio State University Center for Vocational Education, is intended to provide a brief background to the curriculum and its elements so that the user can decide how existing program needs can be met by implementing the CCEM curriculum. Chapter 1 presents an overview of the CCEM products; chapter 2 discusses use of the materials. Chapter 3 describes the CCEM curriculum in terms of the development cycle, topics and sequence, and features of the modules. Chapter 4 presents guidelines for teachers in determining which modules to use in their classrooms and also suggests various strategies and approaches to instruction. Chapter 5 is addressed to the school or district level administrator considering comprehensive or partial use of the CCEM materials, and discusses needs, compatibility, key support, initial planning, and installation. Chapter 6 provides four examples of alternative strategies for utilizing the CCEM modules. The appendix presents a list of module titles in the program. (TA)

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CAREER EDUCATION
CURRICULUM MATERIALS GUIDE

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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CONTENTS

CHAPTER 1

OVERVIEW 1

CHAPTER 2

USE OF THE MATERIALS 5

CHAPTER 3

THE CCEM CURRICULUM 7

- Development Cycle 7
- Topics and Sequence 10
- Features of the Modules 16

CHAPTER 4

TEACHER CONSIDERATIONS 19

- Instructional Strategies 19
- Recommendations to the Teacher 24
- Daily Management of the Program 25

CHAPTER 5

ADMINISTRATIVE CONSIDERATIONS 27

- Needs 27
- Compatibility 28
- Key Support 28
- Initial Planning 28
- Installation 29

CHAPTER 6

IMPLEMENTATION SCENARIOS 31

- Case 1 31
- Case 2 34
- Case 3 37
- Case 4 39

APPENDIX

- Module Titles in the Program 43

CHAPTER 1

OVERVIEW

Instructional materials play a pivotal role in structuring the curriculum taught in this country's classrooms. Developers and producers of instructional materials in both the commercial and noncommercial sectors have been quick to recognize that career education provides a potent response to a significant social concern--a general lack of awareness of the world of work among students in grades K-12, and a lack of specific information and decision-making skills to be used in career development. In response to this concern, the National Institute of Education's Education and Work Group sponsored one of the largest curriculum development efforts in the area of career education. Under the rubric of the "school-based" model, numerous items to be used by teachers in the classroom were developed.

The Comprehensive Career Education Model (CCEM) products which resulted from this effort are a curriculum model for a school-based career education program, a curriculum concepts scope and sequence chart, instructional materials, and a monograph. The monograph consists of three parts: a description of publisher dissemination activities; a summary of field test activities; and a user's guide to the materials. This user's guide was developed to assist teachers in choosing from the variety of 131 units comprising the curriculum and to assist them in using the units as part of new or ongoing career education programs. The guide is designed primarily for the teacher's use in learning more about the CCEM materials and their potential application in different social/learning settings. A brief history of the development of the CCEM materials has been provided, along with an explanation of their purpose, organization, and major features. The Appendix presents a list of module titles in the program.

The school-based CCEM curriculum consists of learning units, or modules. There are three major strands in this program: Learning about Self, Learning about the World of Work, and Goal Formulation and Personal Planning.

Goals and objectives are provided for each module, and the learning activities and tests are coordinated with the objectives within each module. Although each module is targeted for a certain grade range, it may be used at several grade levels, depending on the needs, interests, and backgrounds of the students.

The CCEM curriuclum model and materials were developed on the basis of a revision sequence consisting of four major events:

1) A survey of teachers, school administrators, and publishers was conducted to assess the acceptability of prototype units.
2) Based on the results of the acceptability survey, the original units were partitioned, revised, and augmented to form a modularized career education program for grades K-12.
3) The 130 modules in the revised set were field tested in 33 school districts across the country.
4) Based on the field test results, each module was revised into final form and readied for publication. The final program contains 131 modules.

Critical characteristics affecting the acceptability and usefulness of the CCEM materials were identified early in the project through the survey of teachers, administrators, and publishers. In order to provide a focus for the evaluation of these two dimensions during the field test, four factors were selected for a detailed examination. These factors concerned the infusibility, manageability, interest value, and effectiveness of the modules. Specific information was obtained regarding the following questions:

1) Are the modules infusible into the regular school program with a minimum of teacher training and teacher effort?
2) Are the learning activities manageable by students and teachers?
3) Are the learning activities interesting to students?
4) Do students achieve the desired learning outcomes?

This guide for using the CCEM curriculum materials is not a prescriptive set of rules to be followed by teachers. It is designed instead to provide a brief background to the curriculum and its elements so that the potential user can decide how existing program needs can be met by implementing the CCEM curriculum.

Every school program has unique missions and goals. The CCEM curriculum was designed to be compatible within a variety of instructional settings; to be adaptable for use with students having different skill levels; to conform to a variety of instructional methods; and to be usefully adopted in whole or in part within existing programs.

Use of a new curriculum or its components involves both teacher and administrative considerations. Consequently, the organization of the guide that follows first describes the CCEM curriculum and then addresses factors of importance to teachers and administrators considering its use.

CHAPTER 2

USE OF THE MATERIALS

The purpose of this monograph is to describe the CCEM materials and to suggest various ways they can be used in the classroom. Numerous concepts, activities, and approaches are embedded in the 131 units. Staff of the American Institutes for Research, with a rich background of experience distilled from the field test of these units in 525 classrooms across the country, is available to provide assistance in any way as modules are being considered or actually implemented.

A school that is serious about implementing career education will need to select and to evaluate these materials very carefully. This guide is intended to provide a framework for helping school users achieve an optimum fit between the materials and the requirements of teachers, the needs of particular learners, and the local curricula.

A curriculum reflects not only the nature of knowledge itself but also the nature of the knower and the process of acquiring knowledge. A primary focus in developing the CCEM curriculum was to make available a large number of learning experiences which can be related to individual needs and capacities. Through the creative use of curricular materials, roleplaying, and simulations, elementary school children can be introduced to career development concepts that are accurate and pertinent to their future development. The concept of change as it relates to characteristics of the self and to the impact of technological advances on the occupational structure can be used at the junior-high level to reinforce the validity of preparing oneself to be flexible but knowledgeable in the fundamental processes that underlie all occupations. At the senior-high level, students can participate in planning projects that utilize decision-making behavior and through which their own interests can surface. This career education model emphasizes the importance of the individual having the skills that will permit him or her to choose as freely as possible among the multiple opportunities available. The CCEM curriculum includes not only the acquisition of specific occupational knowledge but also of the factors (attitudes, goals, and self-concepts) that motivate choice

and decision-making styles. This model is designed to help students become aware of preferences and execute plans by which they can implement these preferences.

The CCEM instructional materials comprise a coherent career education program. One aspect of deciding which modules would be most appropriate for a particular classroom and/or for particular students is understanding the curriculum. The next section presents the formative steps undertaken in the course of the project and the rationale for the model used in materials development.

CHAPTER 3

THE CCEM CURRICULUM

Development Cycle. One hundred thirty-three tentative curriculum units resulted from a career education materials development project conducted by the Ohio State University Center for Vocational Education. AIR was awarded a contract to field test 61 of the units and to format their revision to meet marketing and production plans of a commercial publisher. The 61 units were developed by teachers and dealt with a wide variety of topics in career education. They were in the form of teacher guides with accompanying resource kits. Each teacher guide contained a set of lessons (some had as many as 30 lessons), with each lesson containing objectives. Each lesson also contained a suggested means of measuring student performance on the lesson. A significant number of lessons contained printed student materials. Masters for duplicating these materials, as well as other materials for the teacher to use--such as posters, transparencies, reference books, and filmstrips--were included in the resource kits. Each unit represented a great deal of concentrated teacher input and a wide variety of learning activities associated with specific lesson topics and objectives. It was AIR's task to transform these teachers' goals, objectives, and activities into a set of coordinated practical materials.

The revision process was based on the results of an initial acceptability survey. The survey was conducted among teachers who had experience teaching career education materials, among a random sample of school administrators from across the country, and among publishers with potential for marketing the materials. Briefly, the prototype units were found to contain interesting and potentially effective materials; however, they were too long, too teacher-centered, too teacher-directed, and too costly in terms of resources required. Lessons within units were extremely heterogeneous in content, inconsistent in content difficulty, and redundant in activities within and between units.

The need to organize the potpourri of materials into a programmatic offering became one focus of the revision effort. The challenge was to make the materials as comprehensive as possible, as methodologically sound as possible, and as

properly ordered and targeted as possible. To make the materials more comprehensive also implied making them factually more complete, experientially more varied, and more assertive in shaping students' learning.

Revision of the 61 units consisted of partitioning them and reconfiguring the lessons into 130 modules comprising a coherent career education program for grades K-12. Alternative learning activities were provided in order to replace impractical or potentially ineffectual ones. Any explicit or implicit racial, sex, religious, or socioeconomic bias was removed. Parents and community resources were utilized as much as possible.

More specifically, three approaches to revision were used for the units. The approach selected for the primary-level units put an emphasis on developing highly motivating student materials to be used in conjunction with the learning activities provided in the units. In addition, the variety of activities was increased to include home/community resources in each lesson whenever possible.

The approach for the upper-elementary level emphasized to a much greater degree the provision of many learning activities for a single module goal. The learning activities were chosen to allow infusion into the entire range of the traditional upper-elementary curriculum. Thus, maximum flexibility was provided for the teacher.

The approach used at the seventh- to ninth-grade level led to revised material that contrasted less with the original units than was the case at the other levels. Because specific teachers are responsible for discrete academic areas at this level, there is no opportunity to build flexibility into the materials across subject matter areas. The principal emphasis was upon partitioning the units into several pieces, strengthening the learning activities, and improving the student materials.

Final revisions of the modules were based on the findings of the field test. The 130 modules were taught by volunteer teachers in a variety of school districts across the United States. Each module was taught in two or more classes, with similar classes serving as controls. Information from these teachers and students enabled the project staff to assess the acceptability and usefulness of

the modules in a broad range of schools representative of the national user population for career education materials. In all, 33 school districts participated in the national field test of this program. A complete description of the module format is given on page 16 under "Features of the Modules" later in this section.

Each field test teacher was asked to rate the module on a five-point scale of acceptability, where 5 is highest. Table 1 presents the number of modules given an average rating of 3, 4, or 5 (in other words, the number of modules rated acceptable, very acceptable, or highly acceptable). The teachers rated module acceptability both to teachers and to students.

Table 1

ACCEPTABILITY OF CCEM MODULES

Targeted Grade Range:	K-1	2-3	4-6	7-9	10-12	Total
Number of Modules	14	22	35	36	23	130
Number with Average Rating of 3-5						
For Teachers:	13	21	33	30	13	111
For Students:	13	20	32	23	8	96

Table 1 indicates that the majority of the CCEM modules were recognized as valuable resources by teachers. Although it cannot be determined conclusively from the data, indications are that both teachers and students at upper grade levels exhibited a less positive attitude toward instructional material and learning activities in general than did those at lower grade levels. Upper-level teachers typically were less responsive and less enthusiastic at teacher orientation sessions than were lower-level teachers. Their comments on the evaluation forms were more terse. They were more inclined to concentrate on teaching basic skills in their own subject areas rather than to extend their subject area to include career education.

Each teacher gave pretests for two modules, taught one of the modules, and then gave posttests for the same two modules (for each module the same test was used as pretest and posttest). In other words, one teacher taught the module and

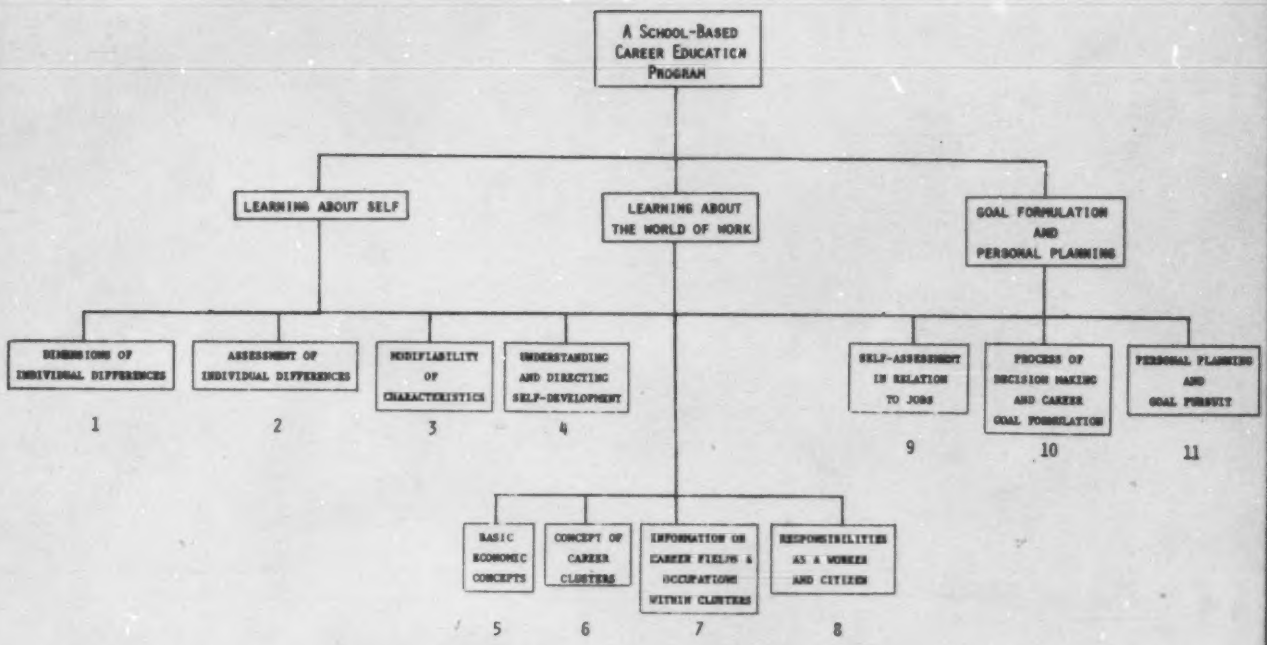
another teacher in the same school district acted as a control, giving the pre- and posttests but not teaching that module. In regard to student performance on the module test, the treatment group scored significantly higher than the control group on 65 percent of the modules. The treatment-by-sex interaction was significant on seven percent of the modules. In these cases, boys' and girls' posttest performance was affected differently as a result of module instruction. Where treatment-by-sex interaction occurred, the module was inspected closely for sex bias, and possible biasing factors were corrected during final revision.

Differences between pretest and posttest scores, attributable to module instruction, were greatest on modules in which students acquired a considerable amount of new information. Modules that were concerned with increasing or intensifying "level of awareness" through simulations or other firsthand experiences did not usually produce more than two or three points of improvement on performance test scores. Nevertheless, the amount of increase in posttest scores did not appear to be related at all to either the teachers' or the students' assessments of the importance and acceptability of the modules. The modules that emphasized firsthand exposure to the world of work were rated highly quite independently of how much students improved on the test scores.

This development cycle resulted in a set of instructional materials with an emphasis on career awareness in the K-6 grade range, an emphasis on career exploration in grades 7-9, and an emphasis on career preparation in grades 10-12.

Topics and Sequence. One major concern expressed by potential publishers was that the prototype materials did not constitute a curriculum in career education. This concern for a coordinated curricular package was reiterated during AIR's initial acceptability survey. The first step undertaken in organizing the materials into a curricular program was to adopt a curriculum model. A model developed by AIR in conjunction with a previous project was modified to meet the prototype materials' needs. The adapted model, presented in Figure 1, is compatible with other curriculum models proposed by other leaders in career education. As can be seen, there are three major strands in the program; subdivision of the strands results in eleven curriculum areas.

FIGURE 1


A SCHOOL-BASED CAREER EDUCATION PROGRAM
LEARNING ABOUT SELF
LEARNING ABOUT THE WORLD OF WORK
GOAL FORMULATION AND PERSONAL PLANNING
DIMENSIONS OF INDIVIDUAL DIFFERENCES
1
ASSESSMENT OF INDIVIDUAL DIFFERENCES
2
MODIFIABILITY OF CHARACTERISTICS
3
UNDERSTANDING AND DIRECTING SELF-DEVELOPMENT
4
SELF-ASSESSMENT IN RELATION TO JOBS
9
PROCESS OF DECISION MAKING AND CAREER GOAL FORMULATION
10
PERSONAL PLANNING AND GOAL PURSUIT
11
BASIC ECONOMIC CONCEPTS
5
CONCEPT OF CAREER CLUSTERS
6
INFORMATION ON CAREER FIELDS & OCCUPATIONS WITHIN CLUSTERS
7
RESPONSIBILITIES AS A WORKER AND CITIZEN
8

The second step in developing a curricular program was to conduct a content analysis of the 61 prototype units. Each of 859 lessons was coded on 26 dimensions. The coding on two dimensions--grade level and location on the curriculum model--was used to develop a scope and sequence chart. First, a curriculum-area by grade-level matrix was formed. Then lessons were assigned to cells. Content areas of the prototype materials that were available for revision were identified as well as areas that needed to be developed to obtain reasonable curriculum coverage. The curriculum concepts scope and sequence chart is presented in Figure 2. The boxed number beside each item indicates the module that teaches the concept.

The first strand of the AIR Career Education Program, Learning about Self, is concerned with developing an awareness of how individuals differ in their physical skills, academic skills, interpersonal skills, interests, attitudes, emotions, and values. The strand also deals with the assessment of self in regard to these various attributes, and it gives attention to the fact that these attributes can be modified. Finally, the strand is concerned with developing self.

The second strand, Learning about the World of Work, is much broader in scope. It provides knowledge concerning the characteristics of a wide range of occupations. The strand also is concerned with developing an awareness of the interdependency of jobs and an understanding of how the needs of individuals, groups, and society are met through work. The relationship of the economic system (production, distribution, and consumption) to career supply and demand is emphasized in this strand.

The third strand, Goal Formulation and Personal Planning, brings the topics of the first two strands together for the purpose of formulating individual career plans. Thus, the perspective is on assessment of oneself in relation to jobs. The primary focus is on an individual's responsibility for his or her own career planning. Development of decision-making skills that can lead to short-term and long-term career development is emphasized in the strand as is the development of social and communication skills required for locating and obtaining career information and career placement. The particular emphasis of the strand is on dealing with career development as a continuing and sequential series of choices (including the selection of educational options)--in which flexibility in planning is critical for our changing society.

FIGURE 2

CURRICULUM CONCEPTS CHART

STRAND I

LEARNING ABOUT SELF

AREA	K-1	2-3	4-6	7-9	10-12
Dimensions of Individual Differences	Differences in physical characteristics	Differences in interests & emotions	Differences in values	Differences in abilities	Differences in personal goals
Assessment of Individual Differences	Assessment of physical skills	Assessment of academic skills	Analysis of interests	Methods of assessment	Purposes & limitations of assessment
Modifiability of Characteristics	Physical changes	Emotional & intellectual changes	Changes resulting from effort	Influences shaping interests & attitudes	Relative modifiability of characteristics
Understanding & Directing Self-Development	Building self-confidence	Effects of behavior on others Expanding self-awareness	Analysis of social behavior Formulating self-concept	Developing interpersonal skills Clarification of values	Identifying areas for self-development Analysis of self-concept

FIGURE 2 (CONTINUED)

CURRICULUM CONCEPTS CHART

STRAND II — LEARNING ABOUT THE WORLD OF WORK

AREA	K-1	2-3	4-6	7-9	10-12
Basic Economic Concepts	Uses of money K-S-1 Interdependency of consumers & workers K-S-2	Our monetary exchange system 2-S-4 Interdependency of jobs 2-S-2 Variation in work locations & conditions 2-S-3	Rewards of working 4-S-1 Evolution of occupations to meet needs 4-S-2 Labor migration & mobility 4-S-15	Financing a business 7-S-6 Ways to organize a business 7-S-5	Effects of government economic policy 10-S-6 Functions & effects of labor unions 10-S-1
Concept of Career Clusters		Using simple clusters 2-S-1	How to form clusters 4-S-24	Introduction to the twelve AIR clusters 7-S-16	Comparisons among the AIR clusters 10-S-5
Information on Career Fields & Occupations Within Clusters	Police officer K-S-3 Fire fighter K-S-4 Doctor/nurse K-S-5 School workers K-S-6	Farmer 2-S-5 Baker 2-S-6 Water workers (plumber/chemist/meter reader/ecologist) 2-S-7 Meteorologist 2-S-8 Advertising worker 2-S-9 Forest ranger 2-S-11 Secretary 2-S-10	Careers in the arts (dancer/actor/reporter/announcer/graphic artist/architect) 4-S-3, 4-S-4 Health careers (doctor/nurse/technologist/therapist/dental worker) 4-S-8 through 4-S-13 Environmental careers 4-S-14 Service careers 4-S-5 Postal workers 4-S-7 Construction workers 4-S-16 Teacher 4-S-26 Secretary 4-S-18 Engineer 4-S-17 Salesperson 4-S-22 Auto mechanic 4-S-19 Lawyer 4-S-21	Newspaper careers 7-S-21 Television Careers 7-S-18 Careers in tourism 7-S-7 Careers in finance 7-S-8 Careers in transportation 7-S-9 Careers in developing natural resources 7-S-10 Careers in construction 7-S-11 Careers in communication 7-S-12 Careers in trade 7-S-13 Careers in recreation/entertainment 7-S-14 Hotel/motel workers 7-S-15 Careers in child care 7-S-20 Advertising writer 7-S-22 Careers in science 7-S-2 - - - - - - - - - - - - - - - Drilling for oil 7-S-17 Writing newspaper articles 7-S-23 Producing a newspaper 7-S-24 Producing a television show 7-S-19 Planning a nursery school 7-S-27	Home management careers 10-S-4 Paraprofessional careers 10-S-3
Responsibilities As a Worker & Citizen	Responsibilities for tasks K-A-1	Responsibilities to a group 2-A-1 Necessity for rules & laws 2-A-2	Cooperation in a group 4-A-11 Volunteering a personal service 4-S-6	Responsibilities on the job 7-A-2 Value & dignity of all jobs 7-S-23	Rights to freedom from biases in hiring 10-A-1 Interrelation of one person's rights and those of another 10-A-2

FIGURE 2 (CONTINUED)

CURRICULUM CONCEPTS CHART

STRAND III

GOAL FORMULATION AND PERSONAL PLANNING

AREA	K-1	2-3	4-6	7-9	10-12
Self-Assessment in Relation to Jobs	Assessment in relation to tasks at home [3-3]	Assessment in relation to tasks at school [4-3]	Assessment in relation to career options [6-3]	Formulation of a personal concept of work [8-3] Characteristics to consider in goal formulation [8-3]	Assessment of one's view of success [9-3] Assessment of attitudes toward work [9-3] Components of a satisfying life style [9-3]
Process of Decision Making & Career Goal Formulation	Introduction to decision making [1-3]	Factors that influence decision making [2-3]	Analysis of the decision making process [6-3] Sources of influence re career options [6-3] Goal formulation in relation to interests and abilities [6-3]	Decision making & career goal formulation [8-3] Sources of information re career options [8-3] Goal formulation in relation to need satisfaction [8-3]	Decision making applied to choosing a career [9-3] Goal formulation in relation to personal values [9-3] Goal formulation in relation to life style expectations [9-3]
Personal Planning & Goal Pursuit	Importance of planning to attain goals [3-3]	Relation of school to activities outside [5-3] How to plan to attain goals [5-3]	Relation of school to future careers [6-3] Determination of prerequisites for attaining a given goal [6-3]	Relation of school to desired worker attributes [8-3] Implementation of a plan to attain a goal [8-3] Planning for out of school jobs [8-3]	Types of post-secondary schooling [9-3] Development of job application skills [9-3] Planning & doing volunteer work as career preparation [9-3]

As shown in Figure 2, modules were developed within the three curriculum strands at all grade ranges; however, there is more emphasis on Strands I and II than on Strand III in the elementary grades, while in the intermediate and secondary grades there is relatively more emphasis on Strand III. A complete list of module titles by strand is provided in the Appendix.

Features of the Modules. The modules consist of a teacher guide, a student workbook, and a test. The three components were printed separately for field test purposes. However, in the final revision stage, all materials were combined into one unit. Each student workbook contains activity sheets or worksheets for the student (some of which may simply provide information). There are a limited number of self-instructional modules at the secondary level. In these modules, there is no student workbook per se. Rather, students are given a description of the learning activities as well as supporting activity sheets. Occasionally, teacher instructions and/or classroom materials are extensive; in these cases, a special Teacher Supplement or Student Resource Book is included in the module.

Each module at all levels has five major sections; each is described as follows:

- Overview
  This section states the module goal, student objectives, the plan of the module, suggestions for using the module, and methods for assessing student achievement. Where appropriate, the module's relationship to other modules in the program is included.
- Module Profile
  This section provides an outline of the learning activities and resource materials.
- Learning Activities
  This section includes all suggested activities for the classroom or for field trips and other assignments outside the classroom.
- Student Materials
  As indicated above, this section (in the majority of modules in the form of a student workbook) contains activity sheets to support the learning activities.
- Module Test
  The last part of the teacher guide includes a suggested test to use in checking student knowledge and understanding of the module. The questions are directly derived from the objectives of the module. The test answer key relates each item to its objective; in addition, the module test cover lists the student objectives that are tested.

Figure 3 on the following page illustrates the major components of the module.

Figure 3

MODULE COMPONENTS

Section I: Overview

- Module goal and student objectives
- Plan of the module
- Suggestions for using the module
- Methods for assessing student achievement

Section II: Module Profile

- Topics
- Learning activities outline
- Resources/materials

Section III: Learning Activities (organized for each objective)

Section IV: Student Materials

- Activity sheets

Section V: Module Test

CHAPTER 4

TEACHER CONSIDERATIONS

This section presents some guidelines for teachers in determining which modules to use in their classrooms; it also suggests various strategies and approaches to instruction.

- The CCEM curriculum has synthesized a significant amount of material and information into a coherent program with associated individual and group learning activities.
- CCEM can be adopted as a total program or as pieces that relate to an existing program.
- The CCEM approach allows for individual rates of learning, interests, and levels of achievement.
- The students know from the module objectives what they are expected to achieve.
- Each module provides ideas, suggestions, and resources for many different activities, such as role playing and simulations.
- The module test has the capacity to provide immediate feedback to students via the test answer key.

The remainder of this section describes (1) the different instructional strategies and settings compatible with the CCEM materials, and (2) specific recommendations to the teacher regarding program planning and management.

Instructional Strategies. Alternative suggestions for teaching with the CCEM materials include how to use them in a relatively traditional classroom setting, in small-group situations, and in an independent study situation.

1) Large-Group Traditional Classroom Approach. In situations where the "lecture method" is preferred, the CCEM modules may be used as a teacher content outline for presentations and subsequent student activities. The teacher may provide all necessary information and experiences to students. In this fashion, the teacher would base the presentations on the learning activities section and

make student assignments based on the student activity sheets. Final examination might be based on the module test. Suggestions for additional student involvement or individual projects are occasionally supplied in the form of module wrapup activities.

2) Small-Group Situations. The CCEM modules can be used effectively in a student-centered, heuristic approach, with small groups of students engaged in study under the general direction of one or more discussion leaders. The learning activities contained in each module lend themselves very easily to this approach. For example, 22 of the 131 modules were developed expressly for use with small groups of students. Other modules were developed for use with the total class together initially and subsequently breaking into groups; with two or three group teams within the class; or with other combinations of groups. In 119 of the modules, the teacher's role can be viewed as emphasizing student participation. The fact that the modules contain well-defined objectives and directions facilitates this type of instructional strategy.

3) Independent Study. Ten of the 22 modules at the secondary level were designed to be sufficiently self-contained for use in programs that utilize individualized instruction. In addition, some modules at the upper elementary and junior high levels were developed for use by students on an individual basis or for use with the total class together initially and subsequently individual activities. The CCEM materials contain the following elements that typically characterize individualized instruction:

- The objectives of the lesson are clearly stated so that the student knows what he or she is to learn.
- The student is an active learner rather than a passive receiver.
- The teacher can function as a learning manager and consultant for the student rather than as a dispenser of knowledge.
- The students have an opportunity to test their knowledge or skills and receive an immediate confirmation or correction via the test answer key.
- The emphasis is placed upon self-evaluation for the individual student rather than upon competition with other students.

The various module components contain the following essential elements of individualized learning materials:

- Headings. These and other descriptive features distinguish main parts and subparts, activities, and study and test materials.
- Overview. The purpose of this section is to give reasons why the student needs to learn the material and, where appropriate, to state the module's relationship to other modules in the program.
- Objectives. These are instructional objectives that indicate exactly what the student is to learn.
- Activities. The learning activities are the instructional portion of the module when used in individualized instruction. The student is given a reading assignment or reading material, sometimes a brief research or other individual project, and asked to complete a series of exercises.
- Posttest. The module test may be used as a posttest. It might also be presented orally so that students respond directly to the teacher, to a small group, or to the entire class. The multiple-choice format could be partially modified by the teacher to include essay items to which the student may respond more subjectively.

4) Contract Approach. The contract approach to instructional management is a method of teaching the individual student within a large or small group by allowing for individual levels of interest and attainment, individual tastes, and individual rates of learning. It may be used in conjunction with any of the previously mentioned approaches. The contract approach generally contains the following elements:

- The contract specifies student objectives, student activities, and methods of student evaluation.
- The contract is cooperatively developed between teacher and student, with minimum requirements clearly specified by the teacher prior to its development.
- Broad time frames are usually desirable, with check points along the way (of course, this depends upon the scope of the module being studied).
- Both student and teacher should have copies of the contract.
- The teacher may develop several different basic contracts from which students may select and then individually modify.

Figure 4 presents a sample contract for studying a module targeted for grades 4-6. Since this is a concise module, there is a short time span.

5) Incentives Approach. The incentives approach to instructional management has been the subject of a great deal of interest over the past few years as a vehicle for improving academic performance. It may be used in conjunction with large-group, small-group, and independent-study situations. Both material and

Figure 4

EXAMPLE OF CONTRACT LEARNING

CONTRACT: Module E-5-8 INTRODUCTION TO HEALTH CAREERS

DEVELOPED BY R. Jones (student) and T. Hawthorne (instructor) March 1, 1977

Objectives	Activities
1. Identify ways in which a person can keep him- or herself healthy	1. Keep a two-day record of what I do to keep myself healthy
2. Identify the five health worker groups into which most health workers fit	2.a. Classify 15 health workers according to the appropriate group title b. Match 10 pictures of health workers with the correct job description and health worker group title c. Construct a collage that displays health workers in the five different groups
3. Understand that health workers depend upon workers from different groups	3. With other classmates, act out a scenario demonstrating the interdependence of health workers. Complete the module test

Completion Dates

Activity 1 - March 3, 1977

Activity 2a. - March 4, 1977
2b. - March 7, 1977
2c. - March 9, 1977

Activity 3 - March 11, 1977

Evaluation Method

1. Comprehensiveness of record (rated by teacher)
2. Accuracy of matching activity (rated by teacher and class committee)
3. Completion of module test to teacher's satisfaction

social incentives may be used. Examples of the former are food, gum, goldfish, clothes, jewelry, and crayons. These material incentives have proven to be instrumental in improving academic performance. Examples of social incentives are teacher praise (both verbal and written) and class social pressures. Secondary reinforcers, such as points, stars, or tokens, can be exchanged for goods, services, and privileges. For example, in some classrooms tokens have been exchangeable for candy or toys; in other situations, they were exchanged for tickets to special events or play activities. Money and trophies have symbolic value for representing accomplishments.

More specifically, students might earn tokens for completing certain amounts of work on a module. The tokens, in turn, could be used to purchase a ticket to a special event that took place near the end of the school day. Alternatively, students could be given a ticket for completing a certain amount of work. On the ticket they could write anything they wanted to do the next day. Another possibility is having students circle numbers on a card to represent points toward a later reward.

The incentives approach can be used very effectively with the contract approach. The contract would specify rewards that would accrue for certain behaviors. Points earned for work satisfactorily completed on a module could be redeemed for time spent in a "high interest" area. This high interest area would contain many activities that are desired and valued by the student. (Research has found that more satisfactory work is performed when the student specifies the basis for awarding points than when the teacher specifies it.)

An "incentives menu" can be used to accommodate the fact that an individual's tastes and interests fluctuate from day to day and that a person may tire of one type of reward after receiving it several times. In this situation there would be a variety of incentives from which the student would choose the reward that most appeals to him or her at that particular time. A special area of the classroom can be stocked with a large variety of games and activities. Junior-high students might exchange points for the opportunity to spend time at a computer terminal or a simulation occupational laboratory. Senior-high students might exchange points for on-the-job experiences.

Recommendations to the Teacher. Planning steps--the CCEM modules are easy and flexible to use if the teacher:

- Reads the material prior to use.
- Is familiar with the essential features of the modules and their purpose in the instructional process; briefly, these include:
  Overview
    Module Goal
    Student Objectives
  Module Profile
  Learning Activities
  Student Materials
  Module Test
- Determines the sequence and teaching methodology for the modules.
- Develops a plan prior to the use of each module that states 1) the activities that need to be completed; 2) the procedures for completing the activity; 3) a specified date for completion of the activity; and 4) the person responsible for completing the activity. See Figure 5 for an illustrated example of this plan in relation to Module E-5-8.

Figure 5

PLAN FOR MODULE UTILIZATION

1. Task	2. Procedure	3. Completed Date	4. Person Responsible
Invite the district nurse to talk to the class about good health habits	Call Public Health Department to make arrangements	2/24/77	Teacher
Collect library books about different health workers for students to use as resources	Talk with school librarian. Call district library; collect and/or place materials on reserve	2/25/77	Teacher
Prepare student materials	Prepare ditto masters for Activity Sheets 1, 3, 4, and 5	2/28/77	Teacher & AV Department
	Arrange for overhead projector to show Activity Sheet 2		
.	.	.	.
.	.	.	.
.	.	.	.
.	.	.	.

Daily Management of the Program. This section informs potential users of various ways to capitalize upon the modules' flexibility. It is primarily an anecdotal narrative of ways in which the modules were modified by users as they were being field tested, thereby giving a flavor of the modules' adaptability.

First, in regard to module learning activities, teachers should not feel that the activities are a prescriptive set of steps. Rather, they should feel free to select the activities most appropriate for their students. In other words, teachers may eliminate a certain activity if they feel their students have already mastered the background material presented in the activity, or if the activity is not essential for achieving the module objectives. This picking and choosing aspect of the modules makes them quite flexible. For example, in field testing a junior-high module on newspaper careers, two teachers did not use the first activity--an introduction to the structure and organization of an average daily newspaper--because their students had a unit covering this material in the previous grade.

A second aspect of module flexibility is the breadth of the potential audience for any particular unit. Although the modules were targeted for particular grade ranges in their development, this should not be viewed as a restriction for their use with other groups. There are some modules targeted for grades 4-6 that would work very nicely at a seventh- or eighth-grade level (not necessarily the entire module, but some of its activities). For example, an upper elementary module on careers in therapy was field tested in a seventh- and eighth-grade science class. The majority of students (68%) found it "really interesting" and indicated that they "sure learned a lot" (54%). The teacher rated the module very acceptable to teachers and acceptable to students, as well as indicating that he would use the module again with minor revisions. The teacher shortened the first activity (an introduction to the techniques of therapy) and eliminated the last two activities (a field trip to visit a therapist and writing to professional organizations for additional information about careers in therapy) on the basis of their being inappropriate or below the interest level of the students. However, the middle three activities (each of which focused on one kind of therapist) were used in their entirety. The teacher rated all three activities acceptable and indicated that the student activity sheets were very useful. In this way the teacher

used the module to provide students with basic knowledge about a health career, while eliminating supplementary activities that were not appropriate for students at that level.

A third component of module flexibility is in use of the student materials. Teachers can make ditto masters of the activity sheets so they can be duplicated for student use. In some cases, field test teachers found it desirable to duplicate the teacher resource materials as well. The activity sheets can be displayed on an overhead projector for total-class or small-group discussions. The activity sheets can be used as in-class or homework assignments.

Finally, teachers should feel free to be innovative in modifying module activities to make them more workable in their particular classes. One of the most positive results of the field test was that teachers were able to—and did—adapt the learning exercises to make them relevant for their students. Returning to the module on newspaper careers, one eighth-grade English teacher rated the module as very flexible, commenting that she added a few activities and rearranged others so that each student had a chance to choose an area of interest. In the first activity, the teacher substituted a filmstrip series available in the school but used the suggested discussion questions to focus student attention. In the second activity (a field trip to a local newspaper), the teacher substituted a videotape of another class's field trip that was obtained from the district's career education office. Instead of having a resource person come speak to the class in the third activity, one teacher had each student contact his or her own resource person.

The thrust of this section is that the teacher has complete control over the degree and type of modifications desired in the modules. Any unit can be used just as it is, since it contains a synthesis of a significant amount of material and information. On the other hand, each module provides ideas, suggestions, and resources for many different activities. The teacher can obtain modules and continue to teach in the way he or she feels most comfortable, managing classroom instruction in the manner that is most beneficial for his or her students.

CHAPTER 5

ADMINISTRATIVE CONSIDERATIONS

This section is primarily for the administrator, at the school or district level, who is considering comprehensive or partial use of the CCEM materials. However, its content is also relevant to teachers who are thinking of using various modules in their classrooms.

The "development cycle" of the CCEM materials resulted in a set of instructional materials that can be implemented without disrupting the ongoing schedules of administrators or teachers.

- CCEM provides an infusible system for a career education program. In other words, the modules are structured so as to supplement academic courses, primarily language arts and social studies. These supplemental materials apply the student's academic skills to the task of making his or her way in the world.
- The curriculum consists of eleven general content areas, scope and sequence, objectives, instructional materials, and the user's guide.
- Stated goals and objectives allow for easy analysis of the curriculum in relation to its compatibility with local needs.
- The CCEM materials can be used in a variety of settings, allowing for teacher creativity and flexibility.
- The instructional materials have a built-in evaluation system.

The remainder of this section provides the administrator or teacher with additional items of information which may be helpful in making a decision to adopt or adapt the CCEM materials. These considerations are presented within the framework of a hypothetical planning process including 1) analysis of current program needs and CCEM characteristics; 2) development of a compatibility checklist; 3) utilization of key staff members; 4) initial program planning; and 5) actual installation of the program.

Needs. The questions listed below can be used effectively by administrators and teachers wishing to analyze their program needs in relation to the CCEM curriculum.

1) What are the perceived current and desired levels of performance and achievement of career education goals expressed by students?

2) What are the perceived current and desired levels of performance and achievement of career education goals expressed by parents?

3) What discrepancies exist between perceived and desired performance and achievement? These determine program needs.

4) Are the needs of the existing program translated into objectives?

5) How do the module goals and student objectives of the CCEM curriculum relate to specific program needs?

6) How do the resources, content, activities, and assessment plan of the CCEM curriculum relate to identified needs for curriculum?

Compatibility. Once the administrator or teacher views CCEM as a vehicle for improving his or her career education program, he or she might want to list its perceived advantages and disadvantages. In other words, the compatibility of the CCEM curriculum could be estimated. Compatibility checks can be made with respect to acceptance by the instructional staff, as well as by students, and adaptability to local conditions.

Key Support. It is often difficult for the administrator to interest teachers, who are comfortable with their current classroom routines, in a new curriculum. There are some motivational techniques which are effective in leading teachers to become enthusiastic about adopting or adapting new materials. One technique is to identify key staff who will support implementation of the CCEM materials. These may be administrators or teachers who are the opinion leaders in the school or district, and who will be influential in securing the endorsement of others.

Initial Planning. In initial planning it is sometimes helpful to consider these general matters for review by the administrator and key support staff.

- Methods for contacting and organizing planning sessions with key support staff.
- Methods for distributing CCEM information to key support staff.
- Review of the CCEM curriculum by the planning group.
- Examination of needs and CCEM compatibility with existing programs.
- Determination of possible options for use.
- Examination of existing instructional materials.
- Consideration of administrative and staffing factors related to needs, materials availability, and costs.

- Examination of needs for inservice training.
- Determination of plans for disseminating information about the CCEM curriculum to administrators and staff.

While these are general factors to be discussed, each school district may have specific factors to address. Based upon the overall conclusions, the administrator can decide whether the CCEM curriculum meets a school or district need.

Installation. In field testing the modules some administrators found it desirable to conduct the following activities:

- Outline the Modules' Advantages. Recognizing that change is difficult and often resisted, the administrator may want to share his or her reasons for deciding to introduce a new curriculum. Materials might be prepared and faculty meetings scheduled.
- Determine Options for Infusing CCEM. The CCEM materials can be used on a module basis, on a "unit" basis (i.e., all the modules targeted for a particular grade range that relate to one of the eleven content areas), or as an entire curriculum.
- Develop Modes of Implementation. Decisions in this area could be whether the CCEM materials are to be added to the existing career education program, to be substituted for the present career education curriculum, or to be introduced as a new program (e.g., in a district that currently has little or no interest in career education).
- Develop Methods for Obtaining Faculty Support. The administrator may find it desirable for faculty members to review and endorse the CCEM materials. The key support staff identified earlier can be valuable in assisting the administrator in this effort. The most challenging matter to face is that of providing incentives for effective use of the CCEM curriculum. The novelty of using new materials soon wanes, so continued attention to the question of faculty support would be helpful in getting the CCEM curriculum established. A possible facilitating step might be to appoint the key support staff as resource people who would assist teachers in solving day-to-day management problems, thus reducing the chance that teachers might abandon module implementation in the face of unforeseen difficulties.
- Monitoring the Implementation. An evaluation plan is beneficial for judging the effectiveness and acceptability of the CCEM utilization. Evaluation can be carried out at the administrative level, at the instructional level, and at the student level. Evaluation can rely on student and faculty attitude measures, learning outcome assessments, or whatever other methods provide information relating to the adaptation of the CCEM curriculum to the needs of the local school district.

CHAPTER 6

IMPLEMENTATION SCENARIOS

The purpose of this section is to provide examples of alternative strategies for utilizing the CCEM modules. These hypothetical situations present a sampling of ways in which modules might be adopted (in some cases, teacher comments resulting from the field testing of modules have been included).

Case 1

The district in this case was located in a state with a high commitment to career education. In an official position paper the state defined career education as being for all economic, social, ethnic, and ability groups; it was oriented for all learners at every stage of educational development. Career education was conceptualized as essentially a learner-centered instructional strategy, designed to improve educational outcomes by relating teaching and learning activities to the concept of career development.

The district itself encompassed both suburban and rural areas. The student population was 78.8% white and 21.2% black. The average annual income of district families was $6,000-$10,000. The administrative organization of the district was fairly typical of American public school districts. Teachers were equipped with a district-developed handbook of objectives for student achievement by grade and subject area.

Every two years the district conducted a survey of parents to determine their opinions on a specific issue area. The latest survey had been designed to ascertain the community's priorities for curriculum innovation; career education had been identified as the top priority. The survey was in the form of 200 interviews with a random sample of parents in the district. The interviewers were 60 volunteers from the PTA.

The coordinator of elementary education in the central district office was named career education program coordinator and given chief responsibility for

managing a program that would be responsive to the community's priorities as well as being in compliance with the State Commissioner of Education, who had charged each school district with planning, implementing, and evaluating career education. A teacher attitude survey was one of the first implementation needs assessment tasks undertaken. The purposes of the survey were to assess teacher attitudes toward career education, to assess the level of teacher knowledge about career education, and to determine what method of training for career education was preferred by teachers. Survey data were used as a base line with which to compare changes in teacher attitudes, knowledge, and training procedure preferences during and after the implementation period.

In preparation for implementing this program, the career education coordinator attended an NIE-sponsored career education forum. At this conference she became aware of the CCEM materials and decided to use them as the basis for the district's program.

The district offered an incentives approach to encourage teachers to participate in inservice training. It was already established district policy to require that teachers accrue a certain number of points within a specified time period in order to advance on the seniority/pay scale. The career education coordinator scheduled a general orientation workshop. Attendance was voluntary, but in exchange for attending the teacher accumulated points to be used in meeting the district's advancement requirement. The district also gave the teachers released time to attend the workshop, providing substitutes for their classrooms. This orientation workshop focused on the notion of infusion, demonstrating that career education objectives and district subject-area objectives could be taught in the same lesson. Teachers were then given time to develop behavioral objectives, using the CCEM materials, to be incorporated in lessons that would accomplish this dual purpose.

During the implementation period, administration of the career education program depended heavily on school principals. The principal was responsible for submitting a school plan to the career education coordinator as well as for providing primary leadership for installation of the CCEM materials in his or her school, utilizing the interest established in the general orientation workshop. He or she arranged for modules to be available, helped convince

teachers of the value of the program, arranged further teacher training, if necessary, and provided support to teachers after the program. In addition, each school had a parent advisory committee, consisting of 5 to 25 members, who helped secure community resources. These are reactions from a sixth-grade teacher who used Module E-5-22, The Salesperson, in her classroom:

- The students were able to help sell supplies at the school store, which gave them "hands-on" experience.
- The class sponsored a flea market in the school's Bicentennial Bazaar. Students were involved in cleaning items, setting up displays, pricing and selling merchandise, counting change, and totaling sales.

The teacher rated the module as highly motivating, highly acceptable to teachers and students, and indicated that she would use it again with a few changes.

After the implementation period, the career education coordinator wanted to assess the adequacy of the program at the instructional level. The evaluation considerations used determined how well the program works, specifically addressing the organization, consistency, comprehensiveness, usability, adaptability, overall effectiveness, and instructional impact of the modules. Following are the general questions asked by the coordinator:

- Is there a sound relationship and a logical progression from the scope and sequence chart (Figure 2) to the goals and objectives of the instructional modules?
- Are learning activities and objectives logically related?
- Is there consistency across modules regarding organization, sequencing, and levels of difficulty?
- Do stated goals and objectives represent a comprehensive program in terms of the needs of the school district?
- Are curriculum materials suitable for use as is, or should they be modified?
- Do curriculum materials allow for individual teaching and learning styles?
- Does the curriculum allow for practice and application of skills?
- What reactions do students have toward the materials?

These questions were asked in regard to both the entire CCEM curriculum and individual modules.

Teachers provided the primary information for the instructional level evaluation. A staff evaluator whose function was to assess new programs was also an information source. Information was collected using formal and informal methods. Structured interviews and observation schedules were used to collect information from teachers. The teacher attitude survey was also administered upon completion of the implementation period.

Case 2

A fourth-grade teacher in a rural school district decided to implement CCEM modules in his classroom on a personal basis to meet the career education needs of his students. The teacher taught in a state with a high commitment to career education. In a position statement the state department conceptualized developmental career education as dictating the necessity for a total education program relevant to the world of work. Career education was not conceived as replacing or being in competition with any already existing educational programs; it was intended, rather, to make educational subject matter more meaningful and relevant to an individual through reconstructing and focusing concepts around a career development theme.

The district encompassed fewer than 10,000 inhabitants. The ethnic distribution of students was 57% black and 43% white. Families in the district averaged below $6,000 in income per year. The district had a strong emphasis on career education, reflecting the state department's priority. However, individual schools and teachers had a great deal of autonomy in the particular way they chose to implement career education instruction.

The roots of this district's commitment to career education stemmed from a preliminary needs analysis that took the form of a community meeting to discuss and determine the district's educational goals. A wide cross section of the community attended the meeting. Fifteen general educational goals that effectively summarized the results of the first meeting were ranked by persons attending a second community meeting. Participants ranked the educational goals on two scales: the importance of the goal and the effectiveness of the district schools in achieving the goal. The rankings were analyzed to determine the gap between importance and current school performance: the greater

the gap, the higher the priority that goal assumed in district innovation planning. The gap was greatest on the goal statement that read, "Students will develop a knowledge of practical skills related to vocational fields through an exploratory program."

The district reacted to this need identified through a "town meeting" approach by establishing a Career Skills Center for secondary students. It also adopted a rather narrowly focused preference for career education materials infusible into the areas of business and office education, health education, home economics, industrial arts, and trades and industry. The district was indifferent to materials infusible into language arts or social studies. The fourth-grade teacher felt that these were just the materials his students needed most. Therefore, he went to the county's Curriculum Information Center to investigate available career educational materials. Here he discovered the CCEM modules, which meshed nicely with the infusion/supplemental approach fostered by the state department of education. The teacher also had the opportunity to participate in an ESEA Title III project to develop an exemplary career education project. A component of this project was dismissing the students at noon so teachers could have inservice workshops in the afternoon. Thus, with the blessing of the county career education program coordinator (formerly the assistant director of secondary programs), the teacher utilized CCEM modules he thought to be most pertinent for his students.

At the end of the implementation period, the teacher was primarily interested in a learning-experience level evaluation. Evaluation at this level relates to what students gain as a result of having experienced the CCEM program. The purpose of this type of evaluation is primarily to assess the degree to which students participate in awareness, exploration, and preparation experiences in learning about themselves, learning about the world of work, and formulating individual career plans. A secondary purpose is to determine the acceptability of the curriculum to the students. Considerations regarding the program included relevance, effectiveness, ease of use, adaptability to learner's needs, and interest level. Questions asked included:

- Is the curriculum relevant for students with varied backgrounds?
- Is the curriculum relevant to the career interests of students?

- What do students gain in knowledge, skills, and attitudes as a result of the program? What do students gain relative to the intended outcomes of the program?
- Are the reading level and complexity of student materials appropriate for the targeted grade range?
- Can students complete modules in the available time frames?
- Does the curriculum allow students to determine their own needs and influence their own instructional goals?
- Do learning materials suit student preferences?
- What is the interest level of student materials?
- Do students think the learning experiences are useful for developing real-world skills?

Primary sources of information for this learning-experience level evaluation were the fourth-grade teacher and students. The school district also had a staff evaluator whose function was to assess new programs; this individual was another source of information.

Means of collecting information to answer the evaluation questions included both formal and informal methods. The module test was used to determine what students gained in knowledge and skills as a result of the program. Attitude questionnaires and checklists were used to assess changes due to the program. End-of-module questionnaires for the teacher and students were developed to assess actual teaching and learning experiences as well as individual likes and dislikes regarding the materials. Evaluation included an observation schedule to monitor instructional activities. Informal methods of collecting information included unstructured interviews and discussions with the students and teacher.

One module used by the teacher was Module E-1-2, Physical, Emotional, and Intellectual Changes (later revised to become Module P-1-4, How You've Changed!). The teacher rated the module as highly motivating, acceptable to teachers and students, and indicated that he would use the module again with a few changes. The open-ended comment regarding the module was most revealing: "These activities identified the physical, emotional, and intellectual changes since kindergarten, but it is questionable to me if those activities were relevant to career education. I feel there should be additional activities geared to career education."

The county career education program coordinator found this comment indicative of a need for action. He immediately scheduled an inservice workshop in which he introduced and illustrated the importance of self-awareness in relation to career formulation as it interfaces with the aspect of future changes and their implications both for technological innovation and individual flexibility.

Case 3

A seventh-grade teacher in this district wanted to implement career education training; the district had an average interest in career education—it was one of many competing interests. Another relevant factor was that the district had only limited funding available for career education. It was a relatively small, rural district, consisting of three elementary schools, one intermediate school, and one high school, with a total enrollment of 780 students. The population was fewer than 10,000 inhabitants, and 50% of this population was of Mexican-American origin. Agriculture was the predominant factor in the town (the average annual income of school-district families was between $6,000 and $10,000). Many persons were employed directly in agriculture, and more in related food processing industries, such as canneries and slaughterhouses. The climate of the area was semi-arid; major agricultural products were cattle and grain, although fruit and vegetables were grown extensively with irrigation.

Career education was emphasized at no particular grade level; the key feature of the district's plan was its exploratory nature, with no specific plans for implementing career education for the next few years. General preferences for career education materials infusible into particular curriculum areas had not been specified. No effort was made to set up an internal organization for a career education program.

This seventh-grade teacher was particularly concerned with the need to expand the awareness of minorities regarding career opportunities. Differential wage and advancement rates for minority and nonminority members were clearly evident in the community. The teacher was aware that the average Spanish-speaking worker earns less than three-fourths of what the average white worker earns; she had read in the 1973 Manpower Report of the President that in 1969

the median annual income for Spanish-speaking persons was $6,039, while for whites it was $7,875. Career education offered an opportunity to address ethnic stereotyping in employment and career advancement. The teacher thought the goals of career education included helping students expand their career options by reducing ethnic stereotypic views of adult occupational roles. The teacher wanted to find a mechanism for raising students' aspirations and expectations in the face of the reality of the surrounding world, including the attitudes of parents and friends. In attempting to change her students' attitudes, the teacher had to take into consideration the values that had been culturally transmitted through family and the local community. Finally, the teacher wanted to counteract the negative consequences of the interaction of ethnic roles with pre-occupational knowledge, interests, and preferences, believing that this would eventually broaden the job access and life-style selection patterns of the minority students in her class.

First the teacher chose modules in Strand I, Learning about Self, to introduce students to dimensions of individual differences and the modifiability of characteristics. In Module M-1-5, Differences in Abilities, students learned that people have different abilities and that abilities can be developed—they are not innate. Students learned ways to direct self-development. Next the class undertook modules in Strand II, Learning about the World of Work. Students learned methods of financing and organizing a business. As part of the learning activities for Module M-5-11, Careers in Construction, students became involved in making minor repairs on the school building and on their own homes. Instruction in the last part of the school year focused on Strand III, Goal Formulation and Personal Planning. Students learned about sources of information regarding career options.

This teacher utilized a contract approach, since she found that individualization was critical in effecting student achievement. At the end of the school year, the teacher and students agreed that the modules had been successful in assisting decision making pertinent to the students' future life roles. At that point the teacher decided to continue module utilization for at least one more year. The teacher decided to plan for more community involvement by sending notices to community businesses and volunteer organizations to see if they could use student repairs or if they could donate supplies and equipment for repairing the school building.

Case 4

The principal of an elementary school (K-6) saw a need to infuse career development concepts into the educational experiences of students in all grade levels of his school. The school was located in a suburban district covering more than 10,000 inhabitants. The ethnic composition of district students was 46% white, 42% Spanish-surnamed, 9% black, 2% Oriental, and 1% native American. Approximate family income was between $6,000 and $10,000 annually. The district had an average interest in career education; it was emphasized in grades 7-9 through special units as part of the library program. The district preferred career education materials infusible into the areas of language arts and social sciences.

The principal was concerned that this career education emphasis in the middle schools came too late. He was aware that in 1972 more than 25% of the district's students had dropped out of school before high school graduation. This pointed to a discrepancy between the district's educational offerings and student needs. He hoped to shrink this discrepancy by offering his elementary students a coordinated educational experience in the area of career awareness. When his sixth-grade students graduated, he wanted them to value the link between school and future careers through recognition that many school-learned skills are directly related to adult occupations.

At this point the principal assumed the role of a supportive change agent, or a person who facilitates planned innovation. He realized that the majority of teachers in his school had been in the district for ten or more years. During that time the neighborhood had been in a transition period. The student population had changed significantly in composition. Discipline was becoming more of a problem, as teachers had not adapted their instructional methodologies to keep pace with student needs. The principal did not want to be viewed as a punitive, threatening agent forcing a new curriculum on teachers. Yet he realized that many teachers had adopted an ostrich-like posture in coping with their difficulty in relating to students: "If we ignore the problem, it will go away." These teachers wanted to keep things the way they were, even though the principal realized that change was required.

The principal had talked with students and found that they lacked a conceptual map of the work world for use in interpreting information about occupations. At the regular weekly faculty meetings, he began to bring up the need for some kind of instructional materials that would help prepare students for making career decisions. A sixth-grade teacher was sympathetic, and together they reviewed materials currently available to see if any provided a framework for career development. They felt that the materials fell far short of offering students an opportunity to discuss occupational roles in the classroom. The principal and teacher contacted people from other communities that had adopted career education materials. They outlined a program that involved teachers and enlisted community support. In reviewing different materials they discovered the CCEM curriculum modules.

After a month of information gathering, the two staff members decided to gain necessary firsthand experience by having the sixth-grade teacher run a pilot project in her class. In addition to experience, this would provide an opportunity to sample the opinions of students and their parents. If the project were a success, it would be a valuable vehicle for persuading other teachers to implement CCEM modules in their classrooms.

In order to get some comparative data on the effectiveness of this pilot project, the teacher matched her class, which participated in the CCEM materials, against two "control" classes taught by the other two sixth-grade teachers. She administered an attitude test before and after the nine-week unit to all three classes. There were significant differences between the experimental and control groups on the following attitudinal concepts: desire to work, responsibility-dependability, life aspirations, appreciation for quality, value of cooperation, personal satisfaction, dignity of work well done, pride in accomplishment, and adaptability.

When the principal and teacher reported the experience and findings from the pilot project at the next regular faculty meeting, there was a response of interest. The project confirmed that students accepted (indeed, welcomed) the materials. Although the classroom had been well managed initially, absentee rates and the frequency of class disruption had declined. An informal survey of parents' reactions, obtained at PTA meetings and in individual conferences,

had yielded favorable comments. The pilot project demonstrated one other important point--that those who taught the modules would have to be well prepared. Students were able to handle a large amount and variety of materials.

The principal offered his services to any teacher who wanted to implement CCEM modules in his or her classroom. When meeting with a teacher, he suggested various modules he thought would be pertinent to that teacher's particular students and arranged for delivering materials to the classroom. He helped some teachers utilize an incentives approach with their students. As reluctant teachers saw the modules being used successfully in more and more classrooms, they too participated in the program.

The efforts of the principal and sixth-grade teacher to build community support went well. They prepared a slide show to illustrate the CCEM materials used in the classroom; they gave talks at PTA meetings; and they held a series of community meetings to discuss the program. All of this continued over a period of a year. The feedback they got at the end of that period indicated that the vast majority of school parents was interested in the program and was very complimentary about the work that had gone into it. Over a period of time the support of a diverse group of people from business, government, and various civic organizations in the community developed. These people formed a committee to secure community resources.

At the end of the implementation phase, the principal felt he had been successful because he had functioned in four facilitating capacities: as a catalyst, a solution giver, a process helper, and a resource linker. As a catalyst, he prodded teachers to be less complacent and to start working on their problem in motivating students. As a solution giver, he helped teachers adapt the CCEM modules to their students' needs. As a process helper, the principal helped teachers recognize and define their problems in meeting student needs; helped them set objectives for overcoming the problems; helped them acquire and adapt relevant resources; and helped them evaluate the resources to determine if they were effective in meeting student needs. The principal's function as a resource linker involved knowledge and skills in diagnosing problems, knowledge of potential solutions and skill in adapting those solutions, and expertise in the process of change itself.

Appendix

MODULE TITLES IN THE PROGRAM

STRAND I: Learning About Self

B-1-1	My Looks, Likes, and Feelings
B-1-2	Things Are Always Changing
B-1-3	Learning to Use Our Bodies
B-2-1	Success and Self-Confidence
P-1-1	Ways People Differ
P-1-2	How We Act Toward Others
P-1-3	You Are A Student
P-1-4	How You've Changed!
P-2-1	Look At You!
E-1-1	Knowing Your Interests
E-1-3	Different People Have Different Values
E-1-4	Getting Along With Others
E-1-5	Making Changes
E-2-1	Your Values and Your Self-Concept
M-1-1	Values Around Us
M-1-3	Development of Interpersonal Skills
M-1-4	Changing Roles and Maturity
M-1-5	Differences in Abilities
M-6-2	Learning About Interest and Aptitude Tests
S-1-1	Methods of Assessing Individual Differences: Purposes and Limitations
S-1-2	Getting Feedback From Other People
S-1-3	Personal Goals
S-1-4	Acquiring Skills, Interests, Attitudes
S-2-1	The Evolving Self

STRAND II: Learning About the World of Work

B-4-1 Groups and Responsibilities in Groups
B-5-1 Barter or Money
B-5-2 Consumers and Workers--People Who Need People
B-5-3 The Police Officer
B-5-4 Learning About Firefighters and Fire Prevention
B-5-5 Safeguarding Your Health
B-5-6 Workers in Your School
P-4-1 Individual Responsibility and the Group
P-4-2 Why Do We Need Rules and Laws?
P-5-1 Learning About Goods and Services
P-5-2 Worker and Consumer Interdependency
P-5-3 Work Conditions and Locations
P-5-4 Working For Money, Working With Money
P-5-5 Working on Farms
P-5-6 The Bakery
P-5-7 Water Workers
P-5-8 The Weather Forecaster
P-5-9 Why and How Advertising Is Done
P-5-10 How To Be A Secretary
P-5-11 Meet the Park Ranger
E-4-1 Meeting Group Needs Through Service
E-5-1 Rewards of Working
E-5-2 Present, Past, and Future Service Occupations
E-5-3 Careers in the Arts
E-5-4 Six Arts Careers
E-5-5 Careers in Services
E-5-6 Working for Ourselves and Others
E-5-7 Jobs in the Post Office
E-5-8 Introduction to Health Careers
E-5-9 Careers as Medical Practitioners
E-5-10 Careers in Nursing
E-5-11 Careers in Medical Technology
E-5-12 Careers in Therapy
E-5-13 Careers in Dentistry
E-5-14 Environmental Careers

STRAND II - continued

E-5-15 Moving to Where the Jobs Are
E-5-16 The Secretary
E-5-17 The Engineer
E-5-18 Construction Workers
E-5-19 The Auto Mechanic
E-5-20 The Teacher
E-5-21 The Lawyer
E-5-22 The Salesperson
E-5-23 What Are Career Clusters?
E-5-24 Using Map Skills on a Job
M-1-2 Group Cooperation and Job Interdependency
M-5-1 Newspaper Careers
M-5-2 Writing Newspaper Articles
M-5-4 Producing the News
M-5-5 Ways to Organize a Business
M-5-6 A Simulation in Organizing a Business
M-5-7 Careers in Tourism
M-5-8 Careers in Finance
M-5-9 Careers in Transportation
M-5-10 Careers in Resource Development
M-5-11 Careers in Construction
M-5-12 Introduction to Careers in Communications
M-5-13 Careers in Trade
M-5-14 Careers in Recreation
M-5-15 Careers in Personal Services
M-5-16 Introduction to the Twelve Career Clusters
M-5-17 A Simulation: Drilling for Oil
M-5-18 Careers in Television
M-5-19 Production of a Television Broadcast
M-5-20 Learning About the Care of Preschool Children
M-5-21 Planning a Playschool
M-5-22 Advertising and Advertising Workers
M-5-23 The Value and Importance of All Jobs
M-5-24 Careers in Entertainment
S-4-1 Assessing Biases in Hiring
S-4-2 Research on Biases in Hiring

STRAND II - continued

S-5-1 Labor Unions in an Industrial Society
S-5-2 Careers in Science
S-5-3 New Careers: The Paraprofessional
S-5-4 Living on Your Own
S-5-5 The AIR Career Clusters
S-5-6 Governmental Policy, Employment, and the Economy

STRAND III: Goal Formulation and Personal Planning

B-6-1 Thinking About Helping Out in the Home
B-7-1 Introduction to Decision Making
B-8-1 Plans and Goals
P-3-1 School and the World Outside
P-6-1 You Are a Worker
P-7-1 Factors That Affect Our Decisions
P-8-1 Planning to Achieve Your Goals
E-6-1 Free To Choose For Myself
E-7-1 Fundamentals of Decision Making
E-7-2 How Do People Decide on Careers?
E-7-3 My Goals Depend on Me
E-8-1 Making Plans to Reach Goals
E-8-2 How Today's School Can Help You in Tomorrow's Work
M-3-1 Relating School Experiences to Job Attributes
M-6-1 Self-Understanding and Career Planning
M-6-3 What Does Work Mean?
M-7-1 Job Rewards and Information Sources
M-7-2 Career Planning and Decision Making
M-7-3 Building a Career Center
M-8-1 Planning for Out-of-School Jobs
M-8-2 Planning to Achieve Individual Goals
S-3-1 Post-Secondary Schooling
S-6-2 Your Work Attitudes and Expectations
S-6-3 Living and Working in the City
S-7-1 How Realistic Are Your Lifestyle Expectations?
S-7-2 Career Decision Making
S-7-3 Values in Relation to Career Planning
S-7-4 Changing Careers
S-8-1 Job Application Skills
S-8-2 Volunteer Work as Career Preparation